

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA  
SAN FRANCISCO DIVISION

WAYMO LLC,

Plaintiff,

vs.

Case

No. 3:17-cv-00939-WHA

UBER TECHNOLOGIES, INC.;  
OTTOMOTTO LLC; OTTO TRUCKING LLC,  
Defendants,

\_\_\_\_\_ /

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY  
VIDEOTAPED DEPOSITION OF JAMES HASLIM  
THURSDAY, MAY 4, 2017

Reported by:  
Anrae Wimberley  
CSR No. 7778  
Job No. 2610396

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1 Q. How often did Mr. Levandowski bring his 11:07:32  
2 personal laptop to work with him? 11:07:35  
3 MR. KIM: Objection; form. 11:07:35  
4 THE WITNESS: I couldn't possibly know. 11:07:37  
5 BY MR. JAFFE: 11:07:37  
6 Q. Every day? 11:07:39  
7 MR. KIM: Objection; form. 11:07:39  
8 THE WITNESS: The reason I couldn't possibly know 11:07:42  
9 is I don't know whether the laptop he may have carried 11:07:45  
10 was his personal laptop or the work laptop. 11:07:48  
11 BY MR. JAFFE: 11:07:48  
12 Q. I see. All right. So let's just talk about 11:07:51  
13 the one laptop that you know about. 11:07:53  
14 How often did he bring that laptop to work 11:07:55  
15 with him? 11:07:56  
16 MR. KIM: Objection; form. 11:07:56  
17 THE WITNESS: I don't know. I have no idea. 11:08:02  
18 BY MR. JAFFE: 11:08:02  
19 Q. You saw him at work with the personal laptop; 11:08:06  
20 right? 11:08:06  
21 A. I'm sure I've seen him at work with a laptop. 11:08:10  
22 Q. And that was a regular occurrence; right? 11:08:12  
23 MR. KIM: Objection; form. 11:08:14  
24 THE WITNESS: I hardly paid attention to how often 11:08:18  
25 he was carrying a laptop. 11:08:20

1 that Mr. Levandowski was demoting himself in some way. 11:34:26

2 Are you familiar with that? 11:34:27

3 A. I'm familiar with the announcement that his 11:34:31

4 position was changing. I only take issue with your 11:34:37

5 comment -- or your phrase that says he was demoting 11:34:40

6 himself. I don't know who decided his position should 11:34:45

7 change. 11:34:45

8 Q. I see. 11:34:45

9 So you don't know who actually decided that 11:34:49

10 his position should change? 11:34:51

11 A. Correct. 11:34:51

12 Q. And do you take issue with the idea that he 11:34:54

13 was demoted in some way? 11:34:56

14 A. Not necessarily. 11:34:58

15 Q. Okay. So if I call it his demotion, that's a 11:35:03

16 fair statement? 11:35:03

17 A. I won't argue with that. 11:35:05

18 Q. So how did you find out about 11:35:09

19 Mr. Levandowski's demotion? 11:35:12

20 A. I received an e-mail. I believe the whole 11:35:16

21 company received an e-mail describing that change. 11:35:21

22 I want to say Anthony sent the e-mail, but 11:35:25

23 I'm not 100 percent positive on that. 11:35:28

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

13 BY MR. JAFFE: 11:36:13

14 Q. Before that e-mail on Thursday, there was no 11:36:18

15 sort of company policy excluding Mr. Levandowski from 11:36:23

16 providing input onto LiDAR; right? 11:36:27

17 MR. KIM: Objection; form. 11:36:27

18 THE WITNESS: I'm not aware of any policy before 11:36:31

19 that date regarding excluding him from any aspect of 11:36:35

20 any work at the company. 11:36:36

21 BY MR. JAFFE: 11:36:36

22 Q. Including LiDAR? 11:36:41

23 A. Including LiDAR. 11:36:41

24 Q. So you never received any sort of special 11:36:45

25 instructions about what you could and couldn't do 11:36:47

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1 Q. Who came up with [REDACTED] 11:57:45  
2 for Fuji? 11:57:46  
3 A. I would say that was a decision reached by me 11:57:56  
4 with collaboration with my electrical engineer Florin 11:58:00  
5 Ignatescu. 11:58:02  
6 Q. Anyone else? 11:58:07  
7 A. I believe the discussion of the [REDACTED] 11:58:13  
8 also involved Gaetan as it pertains to the performance 11:58:20  
9 of his lens and how it would work with [REDACTED]. 11:58:25  
10 I'm sure we informed other people. Scott may have 11:58:34  
11 been in the office when we were making this decision 11:58:36  
12 as well. Dan Gruver would probably be informed as 11:58:41  
13 well, but I don't recall Dan playing any role in that 11:58:45  
14 decision. 11:58:45  
15 Q. Who was involved in coming up with [REDACTED] [REDACTED] 49  
[REDACTED] [REDACTED] 11:58:50  
17 MR. KIM: Objection; form. 11:58:53  
18 THE WITNESS: In coming up with [REDACTED] I 11:58:57  
19 would say that was primarily me and the electrical 11:59:00  
20 engineer, Florin. 11:59:02  
21 BY MR. JAFFE:  
22 Q. And then you discussed it with the LiDAR 11:59:05  
23 team? 11:59:07  
24 MR. KIM: Objection; form. 11:59:09  
25 THE WITNESS: Yes. 11:59:09

1 Q. Are you aware of any conversations between 12:00:17  
2 Mr. Gruver or Mr. Pennecot and Mr. Levandowski 12:00:20  
3 regarding the number of transmit boards in the Fuji 12:00:24  
4 design? 12:00:24  
5 MR. KIM: Objection; form. 12:00:26  
6 THE WITNESS: I am not aware. 12:00:28  
7 BY MR. JAFFE: 12:00:28  
8 Q. So it's possible that they have discussed 12:00:29  
9 this issue with them, you wouldn't know that; right? 12:00:32  
10 A. I wouldn't know that. 12:00:34  
11 Q. So you're not saying that Mr. Levandowski has 12:00:36  
12 never had discussions or input into the idea to use 12:00:40  
13 [REDACTED]; right? 12:00:43  
14 MR. KIM: Objection; form. 12:00:46  
15 THE WITNESS: What I am saying is that Anthony 12:00:48  
16 never had input into my decision with my electrical 12:00:55  
17 engineer to put [REDACTED]. 12:01:00  
18 BY MR. JAFFE: 12:01:00  
19 Q. Right. 12:01:00  
20 But you talked about that decision with 12:01:02  
21 Mr. Gruver, for example; right? 12:01:03  
22 A. I think discussions with Gruver came later, 12:01:07  
23 yeah. 12:01:07  
24 Q. Or Mr. Pennecot, for example? 12:01:10  
25 A. Mr. Pennecot was probably consulted in that 12:01:13

1 A. Yes. 12:03:36

2 We knew we needed a laser circuit, so I had 12:03:40

3 Florin design multiple laser circuits onto a board for 12:03:45

4 test and evaluation. We picked one of those circuits 12:03:48

5 that we thought performed the best. He began 12:03:51

6 considering the size of his circuit in one of those -- 12:03:56

7 I believe it was 10 different circuits. The one we 12:03:59

8 chose, he could look at the design of it and tell me 12:04:02

9 the size. 12:04:04

10 So at this point, as I recall, Gaetan did not 12:04:10

11 have a laser board design in his CAD model. He had a 12:04:20

12 lens design. He may have had -- I even doubt he had 12:04:26

13 taken that into CAD yet. 12:04:29

14 Q. So I'm a little bit confused. 12:04:32

15 Where did the idea to have [REDACTED] come 12:04:34

16 from? 12:04:35

17 [REDACTED] 41

18 [REDACTED]. The need to 12:04:49

19 [REDACTED] developed quickly between 12:04:56

20 Florin and I looking at the size of the circuit, 12:04:59

21 knowing when Scott Boehmke defines a certain [REDACTED] [REDACTED] 04

22 [REDACTED], when Gaetan has 12:05:08

23 designed a lens that has a 150 millimeter focal 12:05:13

24 length, it becomes apparent that the [REDACTED] [REDACTED] 16

25 [REDACTED] 12:05:19

1 [REDACTED]

2 [REDACTED]. 12:05:24

3 It was obvious to me that wasn't going to 12:05:26

4 work and we would have to [REDACTED]

5 [REDACTED] Later we went back and looked closer, and I 12:05:33

6 realized, wait a minute, [REDACTED]

7 [REDACTED] So we can't put circuits on [REDACTED]

8 [REDACTED]

9 [REDACTED]. 12:05:47

10 Furthermore, we were starting to look at 12:05:50

11 components on the receiver. We saw components on the 12:05:53

12 receiver that were themselves [REDACTED] 12:05:58

13 Those were high voltage components. They needed 12:06:00

14 additional space between them as well. So it seemed 12:06:01

15 pretty clear at the time [REDACTED] was not 12:06:05

16 going to work, so we said [REDACTED] Florin 12:06:09

17 thought he could [REDACTED] 12:06:14

18 So that ended up with [REDACTED]

19 [REDACTED] We already had decided two cavities to make 12:06:20

20 64 channels, so that ended up with [REDACTED] 12:06:24

21 in the sensor. 12:06:25

22 Q. Where are the documents that reflect the 12:06:27

23 discussions that you were just talking about? 12:06:31

24 A. We did not document our discussions. 12:06:33

25 Q. Okay. So there are no -- there's no 12:06:35



1 documentary evidence to evidence -- to support what 12:06:39  
2 you just said? 12:06:40  
3 MR. KIM: Objection; form. 12:06:42  
4 BY MR. JAFFE: 12:06:42  
5 Q. Is that fair? 12:06:42  
6 A. Not quite. 12:06:43  
7 We have documents showing and indicating to 12:06:47  
8 us what the vertical angles were to be for the sensor 12:06:52  
9 as specified by Scott Boehmke. We have a lens design 12:06:57  
10 that's documented from Gaetan. We have the original 12:07:03  
11 circuit Florin had developed for testing out lasers. 12:07:10  
12 At that point, the documentation stopped. 12:07:14  
13 And we don't have documents for discussions describing 12:07:22  
14 how [REDACTED]  
15 [REDACTED] 12:07:27  
16 Q. Okay. So I just want to run through that 12:07:30  
17 real quick. 12:07:30  
18 So you're saying that you got the idea for 12:07:34  
19 [REDACTED] based on three things. One is the [REDACTED]  
20 [REDACTED] of the diodes that you wanted. Two is the 12:07:43  
21 [REDACTED]. And three is the [REDACTED]  
22 [REDACTED] 12:07:49  
23 Generally, is that fair? 12:07:53  
24 A. I'd like you to add a fourth, which is the 12:07:56  
25 [REDACTED] and possibly a 12:08:04

1 [REDACTED] [REDACTED] [REDACTED]  
[REDACTED] 14:00:49  
3 A. I'm sorry. I don't think I was clear before. 14:00:53  
4 When Gaetan designed the outline of this 14:00:56  
5 board and specified [REDACTED] [REDACTED]  
[REDACTED] [REDACTED] [REDACTED]  
[REDACTED] [REDACTED] [REDACTED]  
[REDACTED] [REDACTED] [REDACTED]  
[REDACTED] [REDACTED] [REDACTED]  
[REDACTED] 14:01:17  
11 Q. So the original idea was [REDACTED] [REDACTED]  
[REDACTED]? 14:01:22  
13 A. No. 14:01:22  
14 Q. So then let me ask my question again then. 14:01:25  
15 What is the point of including [REDACTED] [REDACTED]  
[REDACTED] -- in this chart? 14:01:30  
17 A. This information could have been provided to 14:01:36  
18 the electrical engineer so that [REDACTED] [REDACTED]  
[REDACTED]. 14:01:43  
20 And if he hasn't [REDACTED] [REDACTED]  
[REDACTED] [REDACTED]  
[REDACTED] 14:01:55  
23 Q. Why do you think he did that? 14:01:57  
24 A. He needs to [REDACTED], that's as 14:02:00  
25 good as -- better than an outline of a board which is 14:02:03

1	A. I see that, yes.	14:28:10
2	Q. The "LiDAR team" right there, that includes	14:28:15
3	Anthony Levandowski; right?	14:28:17
4	MR. KIM: Objection; form.	14:28:17
5	THE WITNESS: I wouldn't have considered him part	14:28:24
6	of the LiDAR team, but clearly he was informed of the	14:28:30
7	decision and we got his buyoff because it affected the	14:28:33
8	program.	14:28:34
9	BY MR. JAFFE:	14:28:34
10	Q. So, again, I'm referring to what's in your	14:28:36
11	declaration. Your declaration says, "The LiDAR team's	14:28:39
12	decision."	14:28:39
13	Is Mr. Levandowski part of the LiDAR team in	14:28:41
14	your declaration or not?	14:28:43
15	MR. KIM: Objection; form.	14:28:46
16	THE WITNESS: No.	14:28:46
17	BY MR. JAFFE:	14:28:46
18	Q. So when you said, "The LiDAR team's decision	14:28:51
19	to abandon the project," you're excluding	14:28:54
20	Mr. Levandowski?	14:28:55
21	A. I am.	14:28:56
22	Q. Even though he had to actually make the	14:28:59
23	decision to pivot?	14:29:00
24	A. I would say the LiDAR team proper made a	14:29:03
25	decision based on technical matters; whereas, Anthony	14:29:06

1 MR. JAFFE: Which number are we at? 14:34:23

2 THE REPORTER: I think we're on 156.

3 MR. KIM: How long have you gone on the record? 14:35:02

4 THE REPORTER: We're on 157.

5 THE VIDEOGRAPHER: Three hours and four minutes.

6 MR. KIM: We've got another hour. If there's a

7 convenient time for a break.

8 MR. JAFFE: I'll do this -- 14:35:04

9 MR. KIM: You can ask your next --

10 MR. JAFFE: -- really quick and then we can take a 14:35:07

11 quick break. 14:35:08

12 (Plaintiff's Exhibit 157 was marked.) 14:35:23

13 BY MR. JAFFE:

14 Q. I've marked as Exhibit 157 a document with 14:35:26

15 the slip sheet labeled "Exhibit H." And then the 14:35:30

16 document underlying that says, [REDACTED] 14:35:33

17 Is this a document that you were referring to 14:35:36

18 before that Mr. Levandowski, Anthony Levandowski that 14:35:40

19 is, called you about and discussed? 14:35:41

20 MR. KIM: Objection; form. 14:35:52

21 THE WITNESS: No, this is not, to my recollection, 14:35:56

22 the same document. There does appear to be some 14:36:00

23 features in here, but for reasons I don't understand, 14:36:03

24 there seems to be pages I'm not familiar with. 14:36:07

25 BY MR. JAFFE: 14:36:07

1 Q. So you're familiar with some pages of this 14:36:15  
2 document, but not others; is that fair? 14:36:18  
3 A. I think so, yeah. 14:36:19  
4 Q. Let's go to page 10. 14:36:20  
5 A. Okay. 14:36:22  
6 Q. And, actually, before we get there, going 14:36:30  
7 back to the first page, it's dated May 16th, 2016. 14:36:33  
8 You worked at Otto at that time; right? 14:36:36  
9 A. I believe I did, yes. 14:36:38  
10 Q. And you had had conversations with 14:36:39  
11 Mr. Boehmke by that time? 14:36:41  
12 A. Probably not. 14:36:43  
13 Q. Okay. But were you aware of Uber and Otto 14:36:46  
14 having conversations at that time? 14:36:50  
15 A. I don't think so. 14:36:51  
16 Q. So you weren't aware of the conversations, to 14:36:55  
17 the extent that they were happening, between Uber and 14:36:58  
18 Otto? 14:36:59  
19 A. I don't recall if I had become aware of Uber 14:37:04  
20 and Otto discussions at this early date in May. 14:37:07  
21 Q. So if you look at page 14. 14:37:28  
22 A. Okay. 14:37:34  
23 Q. You see it says, [REDACTED] 14:37:35  
24 A. Yes. 14:37:36  
25 Q. Does this refresh your recollection that Uber 14:37:39

1	A. Right.	14:41:44
2	Q. So to your knowledge, what's described here	14:41:48
3	as Plan B isn't the basis for the Fuji design?	14:41:52
4	MR. KIM: Objection; form.	14:41:55
5	THE WITNESS: I am not aware of a link between	14:41:59
6	this Plan B in this document and the Fuji design.	14:42:04
7	BY MR. JAFFE:	14:42:04
8	Q. And you would be in a position to know;	14:42:08
9	right?	14:42:09
0	MR. KIM: Objection; form.	14:42:11
1	THE WITNESS: I would have to make that	14:42:13
2	presumption. And it's just a presumption.	14:42:15
3	BY MR. JAFFE:	14:42:15
4	Q. In your job, you would be in a position to	14:42:18
5	know that; right?	14:42:18
6	MR. KIM: Objection; form.	14:42:25
7	THE WITNESS: I would expect to know that.	14:42:26
8	MR. JAFFE: Let's take a break.	14:42:32
9	THE VIDEOGRAPHER: We are off the record at 2:42	14:42:36
0	p.m.	14:42:36
1	(Recess taken.)	14:42:36
2	THE VIDEOGRAPHER: We are back on the record at	14:55:55
3	2:56 p.m.	14:55:57
4	BY MR. JAFFE:	14:55:57
5	Q. Have you discussed the subject matter of your	14:56:03

1 testimony during any of the breaks today? 14:56:05

2 A. Nothing in terms of like what we said in this 14:56:10

3 testimony. 14:56:11

4 Q. What does that mean? 14:56:13

5 A. That means the legal team may have advised me 14:56:19

6 on procedural matters, general terms without 14:56:23

7 referencing the actual content of our discussion. 14:56:26

8 Q. What did they tell you? 14:56:27

9 MR. KIM: Objection. 14:56:27

10 Going to instruct you not to answer on the 14:56:31

11 grounds of attorney-client privilege. 14:56:33

12 BY MR. JAFFE: 14:56:33

13 Q. Did your legal team tell you how to testify 14:56:36

14 after these meetings? 14:56:37

15 MR. KIM: You can answer that yes or no. 14:56:39

16 THE WITNESS: Could you be clear by what you mean 14:56:41

17 by "how to testify"? 14:56:42

18 BY MR. JAFFE:

19 Q. I don't think I can be any clearer. 14:56:46

20 A. Like what to say? 14:56:47

21 Q. I'm trying to understand what the legal team 14:56:51

22 told you in terms of general terms, procedural 14:56:55

23 matters, which is what you said. 14:56:57

24 What did they tell you? 14:56:58

25 MR. KIM: Instruct you not to reveal any 14:57:00

1 privileged conversations. 14:57:11

2 THE WITNESS: Are you instructing me not to 14:57:13

3 answer? 14:57:14

4 MR. KIM: You can answer his prior question yes or 14:57:17

5 no. 14:57:17

6 THE WITNESS: If your question is, did they tell 14:57:24

7 me what to say, no. Did they tell me how to testify, 14:57:28

8 no. 14:57:29

9 BY MR. JAFFE: 14:57:29

10 Q. When you said that they told you things about 14:57:31

11 general things and procedural considerations, what 14:57:34

12 general things did they tell you? 14:57:37

13 MR. KIM: I'm going to instruct you not to answer 14:57:39

14 on the grounds of attorney-client privilege. 14:57:40

15 BY MR. JAFFE: 14:57:40

16 Q. What procedural -- what general terms about 14:57:42

17 your testimony did they tell you? 14:57:45

18 A. Let's see. We discussed how much time is 14:57:52

19 left, something called redirect. 14:57:59

20 Q. What did they talk to you about redirect? 14:58:01

21 MR. KIM: And I'm going to instruct you not to 14:58:05

22 reveal any attorney-client privileged conversations. 14:58:09

23 And I don't think you can answer that without doing 14:58:11

24 so. I'm going to instruct you not to answer. 14:58:14

25 BY MR. JAFFE: 14:58:14



1 Q. You talked about redirect on a break? Yes or 14:58:21  
2 no? 14:58:21  
3 A. Yes, we talked about the term "redirect." 14:58:24  
4 Q. And what did you talk about redirect? 14:58:28  
5 A. That is a situation where, instead of you, 14:58:33  
6 the lawyer on my side of the table is going to ask me 14:58:36  
7 questions. 14:58:36  
8 Q. And how did redirect come up in the context 14:58:39  
9 of your conversation? 14:58:40  
10 A. In the context of time remaining and that 14:58:45  
11 redirect would occur after your allotted time has 14:58:49  
12 ended, so it's going to take longer than I might 14:58:54  
13 think. 14:58:54  
14 Q. Did Uber's lawyers tell you that they were 14:58:58  
15 going to do redirect questions? 14:59:00  
16 A. Yes. 14:59:02  
17 Q. And did they tell you what those questions 14:59:04  
18 were going to be about? 14:59:06  
19 A. No. 14:59:07  
20 Q. Did you talk at all about what sort of 14:59:11  
21 redirect would happen? 14:59:13  
22 A. No. 14:59:16  
23 Q. What did you talk about about redirect? 14:59:19  
24 A. That they will ask me questions just like you 14:59:24  
25 ask me questions and that it's going to take longer 14:59:27

1       than the hour, approximately, that we have remaining,       14:59:30  
2       so not to expect it to be over at that time.       14:59:34  
3       Q.     What else, in general terms, did you and your       14:59:36  
4       lawyers talk about on the breaks?       14:59:38  
5       MR. KIM:   I'm going to advise you not to reveal       14:59:46  
6       any attorney-client privileged communications.       14:59:49  
7       THE WITNESS:   So I'm not a lawyer.   I don't know       14:59:55  
8       what is considered attorney-client privilege and what       14:59:58  
9       wouldn't be in that context of conversations, so I       15:00:01  
10      need to be careful not to answer and disclose       15:00:03  
11      something I'm not supposed to say.       15:00:06  
12      MR. KIM:   Do you need to consult with me about a       15:00:09  
13      privilege issue?       15:00:09  
14      THE WITNESS:   Yes, that would help.       15:00:12  
15      MR. KIM:   Can we go off the record so he can       15:00:15  
16      consult with me on a privilege issue before he answers       15:00:18  
17      any further questions about what we discussed?       15:00:20  
18      MR. JAFFE:   I'll withdraw the question and I'll       15:00:22  
19      ask a different question.       15:00:23  
20      BY MR. JAFFE:       15:00:23  
21      Q.     Tell me the substance of your private       15:00:26  
22      conferences -- private conferences during the break       15:00:28  
23      that you had with Uber's lawyers, all of it.       15:00:32  
24      MR. KIM:   I'm going to object on the grounds of       15:00:36  
25      privilege.       15:00:37

1 taking -- and we can do this for more angles if you 15:51:42  
2 wish, but it looks like the diodes -- [REDACTED] 15:51:43  
3 [REDACTED] 15:51:48  
4 [REDACTED] 15:51:56  
5 Q. Could you describe generally how you 15:51:59  
6 calculated that or determined that? 15:52:01  
7 A. Yeah. So [REDACTED] 15:52:05  
8 [REDACTED] 15:52:10  
9 [REDACTED] 15:52:16  
10 [REDACTED] 15:52:22  
11 [REDACTED] 15:52:25  
12 I don't know if you need any more -- 15:52:29  
13 Q. Is there a name for that equation that you 15:52:31  
14 just described? 15:52:32  
15 A. [REDACTED] 15:52:36  
16 [REDACTED] or -- yeah. 15:52:41  
17 Q. And then going back to the channel spacing 15:52:45  
18 under "delta" -- 15:52:46  
19 Is that the term you used? 15:52:48  
20 A. Under "delta" -- channel spacing, yes. This 15:52:55  
21 is an angular spacing. 15:52:57  
22 Q. Does that reflect the accurate channel 15:52:59  
23 spacing for the Fuji Board A? 15:53:02  
24 A. These do appear to be the channel spacing. 15:53:07  
25 In terms of accurate, these numbers are already 15:53:11

1 A. Yeah. 16:01:00

2 MR. JAFFE: Objection; leading. 16:01:03

3 BY MR. KIM: 16:01:03

4 Q. Have you ever used the term [REDACTED] 16:01:08

5 A. I'm familiar with the term from mathematics. 16:01:13

6 Q. What does that term mean to you? 16:01:17

7 A. To me, especially in reference to a 16:01:20

8 mathematical function, the term [REDACTED] means that 16:01:25

9 [REDACTED]

10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]. 16:01:53

14 Q. In your opinion, do -- the channel spacing 16:01:55

15 for Board A for Fuji, do they [REDACTED] [REDACTED]

16 [REDACTED] 16:02:07

17 A. Channel spacing related to the "Delta" column 16:02:10

18 we've labeled? 16:02:11

19 Q. Yes. 16:02:12

20 A. To my understanding, that is not [REDACTED] 16:02:30

21 Q. Why is that? 16:02:31

22 A. I see numbers that start at the "Delta" 16:02:34

23 column, the channel spacing we called it, [REDACTED]

24 [REDACTED]

25 [REDACTED] 16:02:49

1 [REDACTED] 16:02:51

2 Q. Same question for the distance between 16:02:53

3 diodes. 16:02:54

4 Is that distance [REDACTED] [REDACTED]

5 [REDACTED] for Fuji? 16:03:06

6 A. No. The linear distance is not [REDACTED] [REDACTED]

7 [REDACTED] [REDACTED] [REDACTED] [REDACTED]

8 [REDACTED] [REDACTED]

9 [REDACTED] 16:03:26

10 Q. Is that also true for the channel spacing for 16:03:32

11 Board [REDACTED] for Fuji? 16:03:34

12 MR. JAFFE: Objection; leading. 16:03:40

13 THE WITNESS: I see the same [REDACTED] [REDACTED]

14 [REDACTED] [REDACTED]

15 [REDACTED] [REDACTED]

16 [REDACTED] [REDACTED]

17 [REDACTED] [REDACTED] 16:04:05

18 BY MR. KIM:

19 Q. And that's for Board [REDACTED] for Fuji? 16:04:08

20 A. For Board [REDACTED] on this document, yes. 16:04:10

21 Q. What about for Board [REDACTED] are the channel 16:04:15

22 spacings [REDACTED] 16:04:23

23 A. No. [REDACTED] [REDACTED]

24 [REDACTED] [REDACTED]

25 [REDACTED] 16:04:36

1 Q. Um-hum. Let me ask it a different way. 16:13:45  
2 Does the [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] 16:14:10  
6 MR. JAFFE: Objection; form, leading. 16:14:14  
7 THE WITNESS: There is a [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] 16:14:40  
12 BY MR. KIM: 16:14:40  
13 Q. Okay. And earlier you were asked about the 16:14:47  
14 term [REDACTED]; correct? 16:14:48  
15 A. Yes. 16:14:50  
16 Q. And [REDACTED] refers to what when 16:14:53  
17 you're using the term? 16:14:56  
18 A. It depends on the context. I have to be 16:14:59  
19 careful to clarify. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] 16:15:20  
24 Q. And how -- how do you use the term? 16:15:23  
25 A. Most of the time we've been talking, at Uber, 16:15:31

1 THE WITNESS: This does not refer to Fuji. It 16:19:00  
2 could not refer to Fuji. And if you look at the 16:19:08  
3 e-mail -- let me find this. Sorry. 16:19:14  
4 Perhaps Section B discussion -- it sounds to 16:19:22  
5 me like this is discussing Spider, where we're talking 16:19:28  
6 about groups of eight. The date would be consistent 16:19:33  
7 with what we ultimately called Spider. 16:19:41  
8 BY MR. KIM: 16:19:41  
9 Q. Okay. So looking at UBER00008499, you 16:19:50  
10 believe that what's described in A there that you were 16:19:53  
11 asked about earlier actually refers to Spider and not 16:19:56  
12 Fuji? 16:19:58  
13 A. That's what it seems like to me, yes. 16:20:01  
14 Q. I would like to go back to your Exhibit B 16:20:11  
15 from your original declaration. 16:20:14  
16 Do you see that column with the heading 16:20:32  
17 [REDACTED]  
18 A. Yes. There's two. 16:20:36  
19 Q. Okay. Let's look at the leftmost column. 16:20:42  
20 A. Yes. 16:20:43  
21 Q. Are [REDACTED]  
22 [REDACTED] on Fuji boards? 16:20:49  
23 MR. JAFFE: Objection; form and leading. 16:20:52  
24 THE WITNESS: No. As I understand it, the 16:20:55  
25 [REDACTED] 16:21:01

1 [REDACTED] 16:21:04

2 BY MR. KIM: 16:21:04

3 Q. Do you have an understanding as to why there 16:21:07

4 are [REDACTED] listed there? 16:21:09

5 A. Yeah. As I was discussing earlier, my 16:21:17

6 understanding is these coordinates referencing the 16:21:22

7 [REDACTED] were generated early in the development of 16:21:29

8 Fuji when [REDACTED] 16:21:33

9 More specifically, these coordinates were given to the 16:21:37

10 electrical engineer before the electrical engineer had 16:21:39

11 laid out the circuits onto the board and added the 16:21:42

12 fiducial mark onto the board. 16:21:45

13 Q. Are there any plans at Uber to use [REDACTED]

14 [REDACTED] on any transmit boards for 16:22:07

15 Fuji? 16:22:08

16 A. Not that I'm aware of. 16:22:11

17 Q. Okay. You can set that one aside. 16:22:28

18 Actually, a couple follow-up questions on 16:22:46

19 Exhibit 155. 16:22:48

20 I believe you were asked when this document 16:22:52

21 was created -- let me just ask it. 16:22:56

22 Do you know when this document was created? 16:22:58

23 MR. JAFFE: Objection; form. 16:23:01

24 THE WITNESS: Which version are you referring to? 16:23:03

25 BY MR. KIM: 16:23:03



1 Scott Boehmke -- 16:24:46

2 MR. JAFFE: Objection; leading, outside the scope. 16:24:51

3 BY MR. KIM: 16:24:51

4 Q. -- that you discussed in paragraph 18 of your 16:24:55

5 original declaration? 16:24:57

6 MR. JAFFE: Objection; outside the scope, improper 16:25:00

7 redirect. 16:25:01

8 THE WITNESS: 155? 151? 16:25:20

9 BY MR. KIM:

10 Q. It's either 151 or 152. It's 151. 16:25:26

11 (Witness reviews documents.) 16:25:58

12 A. Do you have a paragraph? 16:25:59

13 Q. Paragraph 18. 16:26:00

14 A. Thank you. Okay. Okay. 18. 16:26:08

15 (Witness reviews document.) 16:26:19

16 A. Okay. 16:26:20

17 Q. And for the record, earlier today you were 16:26:22

18 asked about this paragraph. 16:26:25

19 Do you recall that? 16:26:26

20 A. Yes. 16:26:26

21 MR. JAFFE: Objection; leading. 16:26:29

22 BY MR. KIM: 16:26:29

23 Q. And you were asked about whether there was 16:26:33

24 any evidence that the information you received from 16:26:38

25 Scott Boehmke referred to in this paragraph was 16:26:41

1 actually used in Fuji, and you referred to CAD files. 16:26:45

2 What did you -- what CAD files are you 16:26:47

3 referring to? 16:26:47

4 MR. JAFFE: Objection; form and leading. 16:26:51

5 THE WITNESS: I was referring -- 16:26:52

6 MR. JAFFE: Beyond the scope. 16:26:55

7 THE WITNESS: I was referring to mechanical CAD 16:26:58

8 files in the SolidWorks software created by Gaetan 16:27:05

9 that have the angles specified by Scott Boehmke that 16:27:14

10 end up terminating in a set of points for each laser 16:27:20

11 diode emitting point. 16:27:24

12 He then also included a CAD model of the 16:27:29

13 laser board outline that he developed that also had 16:27:33

14 those same emitting points on there. And then, 16:27:41

15 finally, you can see the theta angle matches the 16:27:46

16 prescribed angles that we got from Scott. 16:27:50

17 BY MR. KIM: 16:27:50

18 Q. Can you explain step by step the process from 16:27:54

19 going from the angles that you received from Scott -- 16:27:57

20 A. Okay.

21 Q. -- to what ultimately ended up being the 16:28:02

22 diode placement angles reflected in Exhibit B of your 16:28:08

23 original declaration and marked as Exhibit 155 for 16:28:11

24 your deposition? 16:28:13

25 MR. JAFFE: Objection; form, leading. This is 16:28:15

1 improper redirect, outside the scope. We're just 16:28:20  
2 going to object to all this evidence; I think I've 16:28:24  
3 made that clear. 16:28:25

4 THE WITNESS: My understanding of the process that 16:28:28  
5 led to the coordinates we have in Exhibit 155, 16:28:32  
6 starting with angles that Scott Boehmke provided, was 16:28:36  
7 that Gaetan designed a lens in Zemax. We had decided 16:28:44  
8 on 150 millimeter focal length, chosen material for 16:28:49  
9 the lens. 16:28:50

10 From the lens optimization provided by the 16:28:52  
11 Zemax software, we had the focal length behind the 16:28:59  
12 lens to the beginning of a focal surface. And he had 16:29:05  
13 a radius of curvature for the focal surface. 16:29:10

14 From that information in Zemax, you can take 16:29:14  
15 that into SolidWorks software, model up a curved 16:29:19  
16 surface with the same radius of curvature as the focal 16:29:23  
17 surface defined by Zemax. That could be -- he modeled 16:29:30  
18 that at a location behind the lens with a consistent 16:29:36  
19 focal length developed in Zemax. 16:29:41

20 He then, as I understand it, created lines or 16:29:48  
21 rays in the CAD geometry that reflected the vertical 16:29:52  
22 angles specified by Scott Boehmke, one by one, 16:29:57  
23 individually, for the [REDACTED] different beam angles for the 16:30:01  
24 [REDACTED] boards in the mid-range cavity. 16:30:05

25 He extended those lines or rays until it 16:30:10

1 intersected this curved focal surface. The point of 16:30:17  
2 intersection defined the location for the laser diodes 16:30:23  
3 emitting surface. He then put that into his model, 16:30:30  
4 modeled a PCB behind that. 16:30:33

5 In this case specifically, he had [REDACTED]. 16:30:40  
6 So he had [REDACTED] where rays would 16:30:48  
7 intersect a -- I guess you would call this a 16:30:54  
8 two-dimensional flat, curved focal surface. 16:30:57

9 From that, he had designed this laser board 16:31:06  
10 mechanical outline relative to that outline and 16:31:10  
11 relative to the mounting features that were included 16:31:13  
12 in that design, including [REDACTED]. He had 16:31:16  
13 locations for laser diodes on that board. 16:31:21

14 Individually, those models of the Laser 16:31:28  
15 Boards [REDACTED] were sent to the electrical 16:31:32  
16 engineer, Will Treichler, who then proceeded to lay 16:31:38  
17 out the circuit behind each of the laser diodes. 16:31:41

18 BY MR. KIM:

19 Q. And earlier I believe you mentioned Florin. 16:31:49

20 What was Florin's role in all this? 16:31:52

21 A. Florin is another electrical engineer. He 16:31:55  
22 used to work at Velodyne. I consider him a senior 16:32:00  
23 electrical engineer. So I asked him to design some 16:32:02  
24 candidate laser pulsing circuits. He designed that 16:32:09  
25 test board. And the circuits on there, he tested the 16:32:15

1	Go ahead.	17:21:07
2	BY MR. KIM:	17:21:07
3	Q. Are the current beam angles for [REDACTED]	17:21:11
4	reflected in Exhibit 155 that we were looking at	17:21:14
5	earlier?	17:21:15
6	A. Yes.	17:21:27
7	Q. Okay.	17:21:34
8	A. Let me double check. Hold on. Sorry.	17:21:37
9	(Witness performs calculation.)	
10	A. Okay. Yes. Angles in Exhibit 155 do appear	17:22:07
11	to be the accurate angles that we designed the Fuji to	17:22:12
12	and -- and started building Fuji to.	17:22:15
13	Q. Earlier you were asked about whether or not	17:22:23
14	Mr. Levandowski had input into the Fuji design.	17:22:30
15	Did Mr. Levandowski have any technical input	17:22:34
16	for the Fuji design?	17:22:36
17	MR. JAFFE: Objection; form, leading.	17:22:38
18	THE WITNESS: To my recollection, the only	17:22:44
19	potentially technical input Anthony Levandowski had on	17:22:49
20	the Fuji design were telling us to make it as good as	17:22:55
21	the Velodyne or better. To under-regard any concerns	17:23:03
22	given to us from people in Pittsburgh regarding size	17:23:06
23	and weight, that that should not be a prioritized	17:23:09
24	requirement.	17:23:10
25	BY MR. KIM:	

1 Q. At the very beginning of your deposition you 17:23:19  
2 were asked about whether you had communications with 17:23:22  
3 Mr. Levandowski while you were at Tyto. 17:23:23

4 Do you remember that? 17:23:26

5 A. Vaguely. 17:23:27

6 Q. When you were asked whether or not he gave 17:23:32  
7 you any confidential information, you said you thought 17:23:36  
8 it was general information. What did you mean by 17:23:39  
9 that? 17:23:40

10 A. I believe information Anthony provided 17:23:50  
11 regarding a [REDACTED] was 17:23:57  
12 information that I've seen other places on the 17:24:02  
13 Internet as white papers, as publicly-available 17:24:07  
14 information in terms of architect or configuration for 17:24:11  
15 a laser. I felt recommendations for vendors would be 17:24:19  
16 information, again, publicly available by doing Google 17:24:23  
17 search for components like that. 17:24:26

18 Q. And at the very start of your deposition you 17:24:32  
19 were asked about 64 channels and the convenience of 17:24:34  
20 two. Do you recall that line of questioning? 17:24:37

21 A. Wasn't it the power of two. 17:24:40

22 Q. Maybe it was the power of two. 17:24:42

23 A. Yeah. 17:24:43

24 Q. What was the reason that Fuji had -- or the 17:24:53  
25 Fuji design has 64 channels? 17:24:57

1 Q. And you signed it without actually checking 17:38:47  
2 it was accurate? 17:38:49  
3 A. Whoa. I looked at these numbers. 17:38:52  
4 Q. But you didn't check what you did today 17:38:54  
5 before you signed this declaration, did you? 17:38:59  
6 A. What do you mean? Identifying, double 17:39:02  
7 checking the [REDACTED]. 17:39:04  
8 Q. Yes. 17:39:04  
9 A. I did check that. 17:39:06  
10 Q. So why today did you need to check it again? 17:39:09  
11 A. I like to be careful. 17:39:11  
12 Q. You like to be careful? 17:39:12  
13 A. Yeah. I want to be sure we can show the [REDACTED] 17:39:16  
14 [REDACTED] that they matched. 17:39:19  
15 Q. Did you know when you signed your declaration 17:39:22  
16 whether these actually matched every single angle and 17:39:26  
17 every single board? 17:39:27  
18 A. Yes, I believe I did. 17:39:28  
19 Q. What do you mean you believe you did? 17:39:31  
20 A. To my recollection, I checked [REDACTED] 17:39:36  
21 [REDACTED]. And I checked the 17:39:42  
22 initial [REDACTED] and knew that they would follow the 17:39:46  
23 same pattern so I didn't check every single angle. 17:39:50  
24 Q. How many of these did you actually check 17:39:52  
25 yourself before you signed your declaration? 17:39:55

1           A.     I remember at least checking the initial [REDACTED]           17:40:01  
2           [REDACTED]           17:40:04  
3           Q.     So you checked about six out of the 64; is           17:40:08  
4           that fair?           17:40:09  
5           A.     Yeah.           17:40:09  
6           Q.     And the rest are purely from counsel; you're           17:40:12  
7           just relying on them?           17:40:14  
8           A.     Not exactly.           17:40:16  
9           Q.     You didn't check.           17:40:19  
10           How did you know it was accurate?           17:40:21  
11           A.     How would the pattern change?           17:40:24  
12           Q.     I don't know. It's your declaration.           17:40:26  
13           A.     I understand. From my understanding, the           17:40:30  
14           pattern is consistent in the letters. So once you           17:40:35  
15           start the pattern properly, it's going to finish out           17:40:39  
16           properly.           17:40:40  
17           Q.     Let's go to the next page, page 12.           17:40:42  
18           Who prepared this table?           17:40:44  
19           A.     Counsel for Uber.           17:40:51  
20           Q.     And you had to double check it here at your           17:40:54  
21           deposition; you didn't know whether it was accurate           17:40:55  
22           when you signed it, did you?           17:40:57  
23           MR. KIM: Objection; form.           17:40:58  
24           THE WITNESS: I believe I checked that before as           17:41:00  
25           well.           17:41:01



1 Do you see that? 18:13:12

2 A. Yes. 18:13:12

3 Q. And based on what you talked about with 18:13:14

4 Mr. Kim, Uber's lawyer, it was Mr. Pennecot that 18:13:18

5 imported the data into Zemax; right? 18:13:21

6 A. Yes. 18:13:22

7 Q. And it was Mr. Pennecot that then determined 18:13:25

8 the resultant emitting points of the laser diodes; 18:13:29

9 right? 18:13:29

10 A. Yes. 18:13:29

11 Q. And it was Mr. Pennecot that then exported it 18:13:33

12 into CAD software; right? 18:13:36

13 A. Yes, that's my understanding. 18:13:38

14 Q. And so Mr. Pennecot was the one who actually 18:13:42

15 came up with [REDACTED] 18:13:47

16 based on Mr. Boehmke's beam angles; isn't that right? 18:13:51

17 A. No, I don't think so. 18:13:52

18 Q. So what Mr. Pennecot exported into CAD 18:13:56

19 software, that wasn't [REDACTED] 18:14:04

20 A. So if we go back carefully to transcripts, 18:14:07

21 what I should point out is, since this declaration, I 18:14:11

22 have more detailed information of exactly how 18:14:14

23 Mr. Pennecot did his import. To be accurate, I want 18:14:19

24 to say that there's an error in here that he brought 18:14:25

25 the angles into CAD software, brought the lens design 18:14:31

1 and field curvature shape from Zemax into CAD 18:14:37  
2 software. 18:14:37  
3 Now you're asking did Mr. Pennecot in fact 18:14:40  
4 design the [REDACTED] 18:14:45  
5 [REDACTED] Mr. Pennecot was dependent on 18:14:50  
6 somebody else to tell him how many boards the angles 18:14:53  
7 had to be divided among, and then Mr. Pennecot set the 18:14:58  
8 positions of the laser diodes onto those boards. 18:15:02  
9 Q. Who told Mr. Pennecot to use [REDACTED] 18:15:05  
10 A. I told Mr. Pennecot to use [REDACTED] in 18:15:09  
11 the optical cavity. 18:15:10  
12 Q. Who told him to use [REDACTED] in total? 18:15:13  
13 A. I don't think anybody told him to use [REDACTED] 18:15:17  
14 [REDACTED] in total. 18:15:18  
15 Q. Who told him to put [REDACTED] 18:15:21  
16 [REDACTED] 18:15:22  
17 A. Mr. Pennecot understood the reason we were 18:15:31  
18 going to [REDACTED], so I'll -- with that said, I'm 18:15:35  
19 not aware that anybody had to tell him to [REDACTED] 18:15:39  
20 [REDACTED] 18:15:41  
21 Q. You don't know where Mr. Pennecot [REDACTED] 18:15:44  
22 [REDACTED] from? 18:15:45  
23 A. No, I know exactly where he got it from. 18:15:48  
24 Q. Where did he get it from? 18:15:49  
25 A. The need to [REDACTED]. 18:15:52

1 If you're asking do I know from whom, no. I would say 18:15:57  
2 that he could derive that himself. 18:15:59  
3 Q. Okay. So -- but just to be clear, 18:16:04  
4 Mr. Pennecot -- you told him [REDACTED] 18:16:08  
5 [REDACTED] in the SolidWorks 18:16:13  
6 CAD software, and you told him 64 channels and he 18:16:16  
7 created [REDACTED]; is that fair? 18:16:21  
8 A. I didn't necessarily tell him 64 channels. 18:16:24  
9 He got the list of angles that Scott Boehmke had 18:16:28  
10 generated. 18:16:29  
11 Q. So he knew that there were 64 channels; 18:16:31  
12 right? 18:16:31  
13 A. Without me telling him. 18:16:33  
14 Q. So the sequence of events was there was Scott 18:16:36  
15 Boehmke provided beam angles for 64 channels? 18:16:40  
16 A. Yes. 18:16:40  
17 Q. That went to Mr. Pennecot. He imported that 18:16:45  
18 data into Zemax. And after he outputted into CAD 18:16:50  
19 software, the result was a design with [REDACTED] 18:16:56  
20 [REDACTED]; is that 18:17:01  
21 right? 18:17:02  
22 A. Can you read that back. 18:17:04  
23 (Record read by reporter as follows: 18:17:04  
24 "Question: He imported that data into Zemax. 18:17:04  
25 And after he outputted into CAD software, the